#5

SEQUENCE LISTING

<110> Statens Serum Institut

<120> Hybrids of M. tuberculosis Antigens

<130> 20486US03

<160> 12

<170> FastSEQ for Windows Version 3.0

<210> 1
<211> 95
<212> PRT
<213> Mycobacterium tuberculosis

<400> 1

```
Met Thr Glu Gln Gln Trp Asn Phe Ala Gly Ile Glu Ala Ala Ala Ser
 1               5                  10                  15
Ala Ile Gln Gly Asn Val Thr Ser Ile His Ser Leu Leu Asp Glu Gly
            20                  25                  30
Lys Gln Ser Leu Thr Lys Leu Ala Ala Ala Trp Gly Gly Ser Gly Ser
        35                  40                  45
Glu Ala Tyr Gln Gly Val Gln Gln Lys Trp Asp Ala Thr Ala Thr Glu
    50                  55                  60
Leu Asn Asn Ala Leu Gln Asn Leu Ala Arg Thr Ile Ser Glu Ala Gly
65                  70                  75                  80
Gln Ala Met Ala Ser Thr Glu Gly Asn Val Thr Gly Met Phe Ala
                85                  90                  95
```

<210> 2
<211> 325
<212> PRT
<213> Mycobacterium tuberculosis

<220>
<221> SIGNAL
<222> (1)...(40)

<400> 2

```
Met Thr Asp Val Ser Arg Lys Ile Arg Ala Trp Gly Arg Arg Leu Met
-40                 -35                 -30                 -25
Ile Gly Thr Ala Ala Ala Val Val Leu Pro Gly Leu Val Gly Leu Ala
                -20                 -15                 -10
Gly Gly Ala Ala Thr Ala Gly Ala Phe Ser Arg Pro Gly Leu Pro Val
            -5                  1                   5
Glu Tyr Leu Gln Val Pro Ser Pro Ser Met Gly Arg Asp Ile Lys Val
    10                  15                  20
Gln Phe Gln Ser Gly Gly Asn Asn Ser Pro Ala Val Tyr Leu Leu Asp
25                  30                  35                  40
Gly Leu Arg Ala Gln Asp Asp Tyr Asn Gly Trp Asp Ile Asn Thr Pro
```

```
                45                  50                  55
Ala Phe Glu Trp Tyr Tyr Gln Ser Gly Leu Ser Ile Val Met Pro Val
            60                  65                  70
Gly Gly Gln Ser Ser Phe Tyr Ser Asp Trp Tyr Ser Pro Ala Cys Gly
        75                  80                  85
Lys Ala Gly Cys Gln Thr Tyr Lys Trp Glu Thr Phe Leu Thr Ser Glu
    90                  95                  100
Leu Pro Gln Trp Leu Ser Ala Asn Arg Ala Val Lys Pro Thr Gly Ser
105                 110                 115                 120
Ala Ala Ile Gly Leu Ser Met Ala Gly Ser Ser Ala Met Ile Leu Ala
                125                 130                 135
Ala Tyr His Pro Gln Gln Phe Ile Tyr Ala Gly Ser Leu Ser Ala Leu
            140                 145                 150
Leu Asp Pro Ser Gln Gly Met Gly Pro Ser Leu Ile Gly Leu Ala Met
        155                 160                 165
Gly Asp Ala Gly Gly Tyr Lys Ala Ala Asp Met Trp Gly Pro Ser Ser
    170                 175                 180
Asp Pro Ala Trp Glu Arg Asn Asp Pro Thr Gln Gln Ile Pro Lys Leu
185                 190                 195                 200
Val Ala Asn Asn Thr Arg Leu Trp Val Tyr Cys Gly Asn Gly Thr Pro
                205                 210                 215
Asn Glu Leu Gly Gly Ala Asn Ile Pro Ala Glu Phe Leu Glu Asn Phe
            220                 225                 230
Val Arg Ser Ser Asn Leu Lys Phe Gln Asp Ala Tyr Asn Ala Ala Gly
        235                 240                 245
Gly His Asn Ala Val Phe Asn Phe Pro Pro Asn Gly Thr His Ser Trp
    250                 255                 260
Glu Tyr Trp Gly Ala Gln Leu Asn Ala Met Lys Gly Asp Leu Gln Ser
265                 270                 275                 280
Ser Leu Gly Ala Gly
                285
```

<210> 3
<211> 404
<212> PRT
<213> Artificial Sequence
<220> oligonucleotide

<400> 3

```
 Met Ala Thr Val Asn Arg Ser Arg His His His His His His His His
  1               5                  10                  15
 Ile Glu Gly Arg Ser Phe Ser Arg Pro Gly Leu Pro Val Glu Tyr Leu
             20                  25                  30
 Gln Val Pro Ser Pro Ser Met Gly Arg Asp Ile Lys Val Gln Phe Gln
         35                  40                  45
 Ser Gly Gly Asn Asn Ser Pro Ala Val Tyr Leu Leu Asp Gly Leu Arg
     50                  55                  60
 Ala Gln Asp Asp Tyr Asn Gly Trp Asp Ile Asn Thr Pro Ala Phe Glu
 65                  70                  75                  80
 Trp Tyr Tyr Gln Ser Gly Leu Ser Ile Val Met Pro Val Gly Gly Gln
                 85                  90                  95
 Ser Ser Phe Tyr Ser Asp Trp Tyr Ser Pro Ala Cys Gly Lys Ala Gly
             100                 105                 110
 Cys Gln Thr Tyr Lys Trp Glu Thr Phe Leu Thr Ser Glu Leu Pro Gln
```

```
        115                 120                 125
Trp Leu Ser Ala Asn Arg Ala Val Lys Pro Thr Gly Ser Ala Ala Ile
    130                 135                 140
Gly Leu Ser Met Ala Gly Ser Ser Ala Met Ile Leu Ala Ala Tyr His
145                 150                 155                 160
Pro Gln Gln Phe Ile Tyr Ala Gly Ser Leu Ser Ala Leu Leu Asp Pro
                165                 170                 175
Ser Gln Gly Met Gly Pro Ser Leu Ile Gly Leu Ala Met Gly Asp Ala
            180                 185                 190
Gly Gly Tyr Lys Ala Ala Asp Met Trp Gly Pro Ser Ser Asp Pro Ala
        195                 200                 205
Trp Glu Arg Asn Asp Pro Thr Gln Gln Ile Pro Lys Leu Val Ala Asn
    210                 215                 220
Asn Thr Arg Leu Trp Val Tyr Cys Gly Asn Gly Thr Pro Asn Glu Leu
225                 230                 235                 240
Gly Gly Ala Asn Ile Pro Ala Glu Phe Leu Glu Asn Phe Val Arg Ser
                245                 250                 255
Ser Asn Leu Lys Phe Gln Asp Ala Tyr Asn Ala Ala Gly Gly His Asn
            260                 265                 270
Ala Val Phe Asn Phe Pro Pro Asn Gly Thr His Ser Trp Glu Tyr Trp
        275                 280                 285
Gly Ala Gln Leu Asn Ala Met Lys Gly Asp Leu Gln Ser Ser Leu Gly
    290                 295                 300
Ala Gly Lys Leu Ala Met Thr Glu Gln Gln Trp Asn Phe Ala Gly Ile
305                 310                 315                 320
Glu Ala Ala Ala Ser Ala Ile Gln Gly Asn Val Thr Ser Ile His Ser
                325                 330                 335
Leu Leu Asp Glu Gly Lys Gln Ser Leu Thr Lys Leu Ala Ala Ala Trp
            340                 345                 350
Gly Gly Ser Gly Ser Glu Ala Tyr Gln Gly Val Gln Gln Lys Trp Asp
        355                 360                 365
Ala Thr Ala Thr Glu Leu Asn Asn Ala Leu Gln Asn Leu Ala Arg Thr
    370                 375                 380
Ile Ser Glu Ala Gly Gln Ala Met Ala Ser Thr Glu Gly Asn Val Thr
385                 390                 395                 400
Gly Met Phe Ala
```

<210> 4
<211> 403
<212> PRT
<213> Artificial Sequence
<220> oligonucleotide

<400> 4

```
 Met Ala Thr Val Asn Arg Ser Arg His His His His His His His His
  1               5                  10                  15
 Ile Glu Gly Arg Ser Met Thr Glu Gln Gln Trp Asn Phe Ala Gly Ile
             20                  25                  30
 Glu Ala Ala Ala Ser Ala Ile Gln Gly Asn Val Thr Ser Ile His Ser
         35                  40                  45
 Leu Leu Asp Glu Gly Lys Gln Ser Leu Thr Lys Leu Ala Ala Ala Trp
     50                  55                  60
 Gly Gly Ser Gly Ser Glu Ala Tyr Gln Gly Val Gln Gln Lys Trp Asp
```

```
65                  70                  75                  80
Ala Thr Ala Thr Glu Leu Asn Asn Ala Leu Gln Asn Leu Ala Arg Thr
                85                  90                  95
Ile Ser Glu Ala Gly Gln Ala Met Ala Ser Thr Glu Gly Asn Val Thr
            100                 105                 110
Gly Met Phe Ala Lys Leu Phe Ser Arg Pro Gly Leu Pro Val Glu Tyr
        115                 120                 125
Leu Gln Val Pro Ser Pro Ser Met Gly Arg Asp Ile Lys Val Gln Phe
    130                 135                 140
Gln Ser Gly Gly Asn Asn Ser Pro Ala Val Tyr Leu Leu Asp Gly Leu
145                 150                 155                 160
Arg Ala Gln Asp Asp Tyr Asn Gly Trp Asp Ile Asn Thr Pro Ala Phe
                165                 170                 175
Glu Trp Tyr Tyr Gln Ser Gly Leu Ser Ile Val Met Pro Val Gly Gly
            180                 185                 190
Gln Ser Ser Phe Tyr Ser Asp Trp Tyr Ser Pro Ala Cys Gly Lys Ala
        195                 200                 205
Gly Cys Gln Thr Tyr Lys Trp Glu Thr Phe Leu Thr Ser Glu Leu Pro
    210                 215                 220
Gln Trp Leu Ser Ala Asn Arg Ala Val Lys Pro Thr Gly Ser Ala Ala
225                 230                 235                 240
Ile Gly Leu Ser Met Ala Gly Ser Ser Ala Met Ile Leu Ala Ala Tyr
                245                 250                 255
His Pro Gln Gln Phe Ile Tyr Ala Gly Ser Leu Ser Ala Leu Leu Asp
            260                 265                 270
Pro Ser Gln Gly Met Gly Pro Ser Leu Ile Gly Leu Ala Met Gly Asp
        275                 280                 285
Ala Gly Gly Tyr Lys Ala Ala Asp Met Trp Gly Pro Ser Ser Asp Pro
    290                 295                 300
Ala Trp Glu Arg Asn Asp Pro Thr Gln Gln Ile Pro Lys Leu Val Ala
305                 310                 315                 320
Asn Asn Thr Arg Leu Trp Val Tyr Cys Gly Asn Gly Thr Pro Asn Glu
                325                 330                 335
Leu Gly Gly Ala Asn Ile Pro Ala Glu Phe Leu Glu Asn Phe Val Arg
            340                 345                 350
Ser Ser Asn Leu Lys Phe Gln Asp Ala Tyr Asn Ala Ala Gly Gly His
        355                 360                 365
Asn Ala Val Phe Asn Phe Pro Pro Asn Gly Thr His Ser Trp Glu Tyr
    370                 375                 380
Trp Gly Ala Gln Leu Asn Ala Met Lys Gly Asp Leu Gln Ser Ser Leu
385                 390                 395                 400
Gly Ala Gly
```

<210> 5
<211> 36
<212> DNA
<213> Artificial Sequence

<220> oligonucleotide
<223> M. tuberculosis

<400> 5

ggcgccggca agcttgccat gacagagcag cagtgg 36

<210> 6
<211> 26
<212> DNA
<213> Artificial Sequence
<220> oligonucleotide

<400> 6
cgaactcgcc ggatcccgtg tttcgc 26

<210> 7
<211> 32
<212> DNA
<213> Artificial Sequence
<220> oligonucleotide

<400> 7
ggcaaccgcg agatctttct cccggccggg gc 32

<210> 8
<211> 27
<212> DNA
<213> Artificial Sequence
<220> oligonucleotide

<400> 8
ggcaagcttg ccggcgccta acgaact 27

<210> 9
<211> 30
<212> DNA
<213> Artificial Sequence
<220> oligonucleotide

<400> 9
ggacccagat ctatgacaga gcagcagtgg 30

<210> 10
<211> 47
<212> DNA
<213> Artificial Sequence
<220> oligonucleotide

<400> 10
ccggcagccc cggccgggag aaaagctttg cgaacatccc agtgacg 47

<210> 11
<211> 44
<212> DNA
<213> Artificial Sequence
<220> oligonucleotide

<400> 11

gttcgcaaag cttttctccc ggccggggct gccggtcgag tacc 44

<210> 12
<211> 20
<212> DNA
<213> Artificial Sequence
<220> oligonucleotide

<400> 12
ccttcggtgg atcccgtcag 20